

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



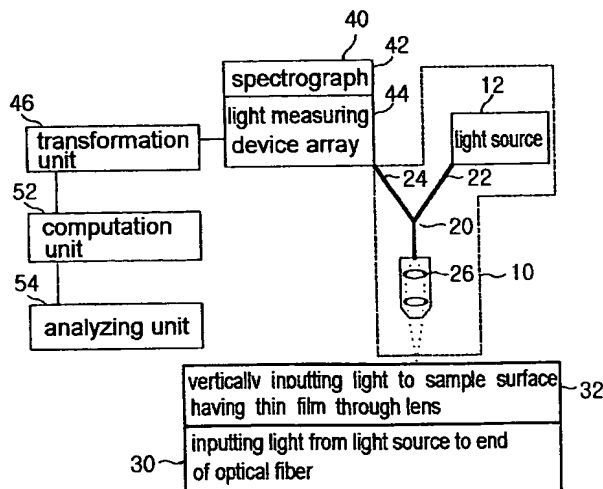
(43) International Publication Date
29 July 2004 (29.07.2004)

PCT

(10) International Publication Number
WO 2004/063661 A1

- (51) International Patent Classification⁷: **G01B 7/02**
- (21) International Application Number:
PCT/KR2003/001203
- (22) International Filing Date: **18 June 2003 (18.06.2003)**
- (25) Filing Language: **Korean**
- (26) Publication Language: **English**
- (30) Priority Data:
10-2003-0001854 11 January 2003 (11.01.2003) KR
- (71) Applicant (for all designated States except US): **EL-LIPSO TECHNOLOGY CO., LTD. [KR/KR]; #210 Ajou University Sanhakwon, San-5 Woncheon-dong, Paldal-gu, Suwon-si, Gyeonggi-do 442-479 (KR).**
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **KIM, Sang-Youl [KR/KR]; 403-1802 Ccachimaeul, 63 Gumi-dong, Bundang-gu, Seongnam-si, Gyeonggi-do 463-738 (KR). KIM, Sang-Jun [KR/KR]; 512-5 (27/1) Uman-dong, Paldal-gu, Suwon-si, Gyeonggi-do 442-190 (KR).**
- (74) Agent: **CHUNG, Yeon-Yong; #1203 Hyundai Topics Bldg., 44-3 Bangi-dong, Songpa-gu, Seoul 138-050 (KR).**
- (81) Designated States (national): **AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.**
- (84) Designated States (regional): **ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).**
- Published:
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **APPARATUS AND METHOD FOR MEASUREMENT OF FILM THICKNESS USING IMPROVED FAST FOURIER TRANSFORMATION**



(57) Abstract: The present invention relates to an apparatus and method for a measurement of a film thickness using an improved fast Fourier transformation. The apparatus includes a light source, a light receiving unit for converging a light from the light source, a detection unit for splitting a reflection light reflected by the surface of the sample and inputted into the optical fabric through the lens, and outputted to the other side of the optical fabric based on a light intensity of each wavelength and providing a certain amount of wavelength, a conversion unit for converting a wavelength based spectrum data detected by the detection unit into an analog signal and then converting into a digital signal through a converter, a computation unit for computing the number of vibrations based on a high speed Fourier transformation, and an analyzing unit for measuring a film thickness.